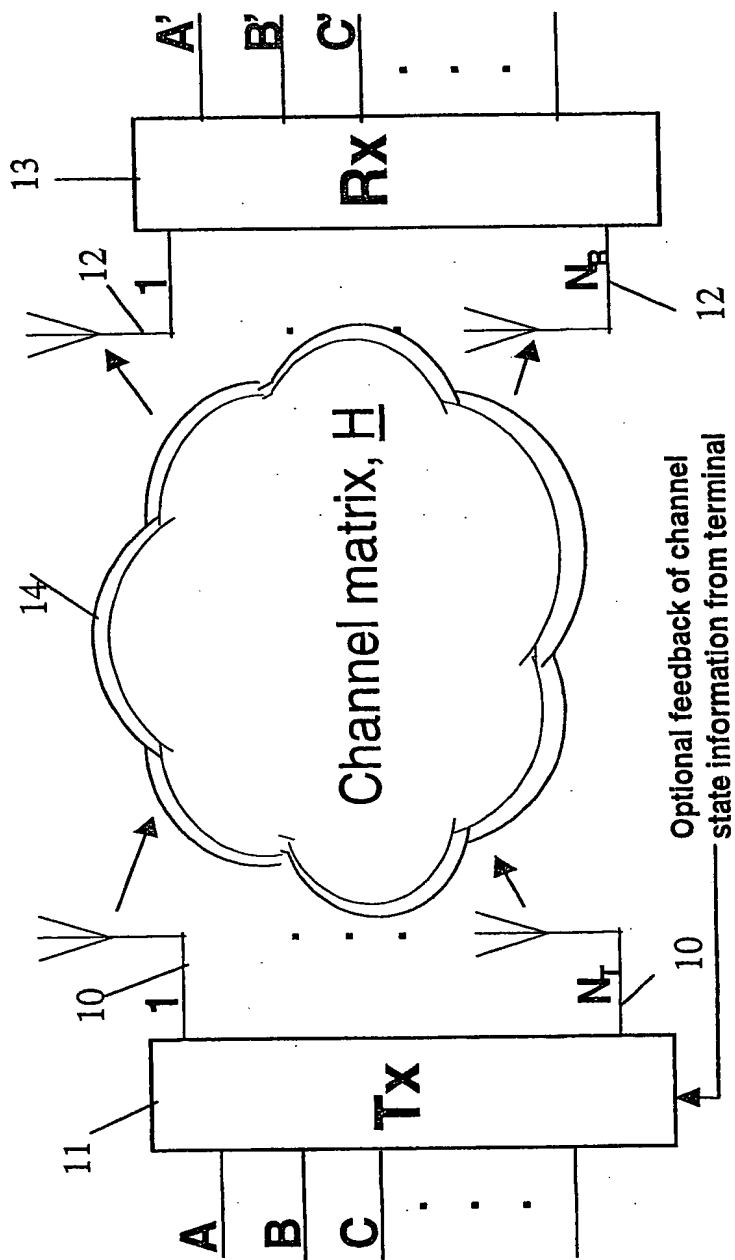


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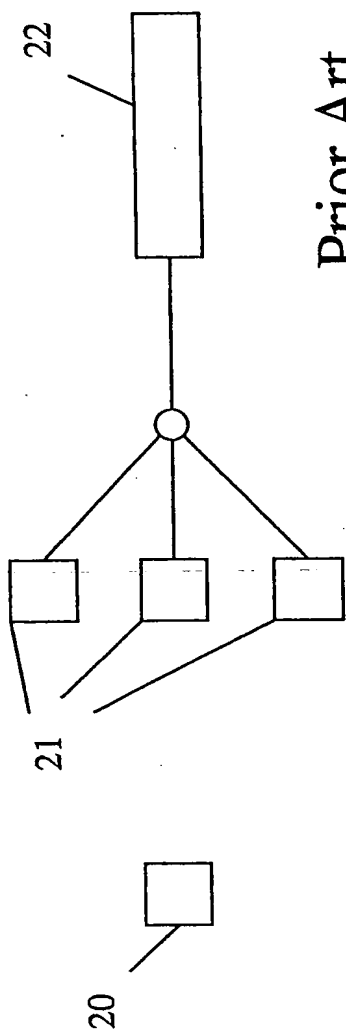


Optional feedback of channel state information from terminal

PRIOR ART

FIGURE 1

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Prior Art

Figure 2a

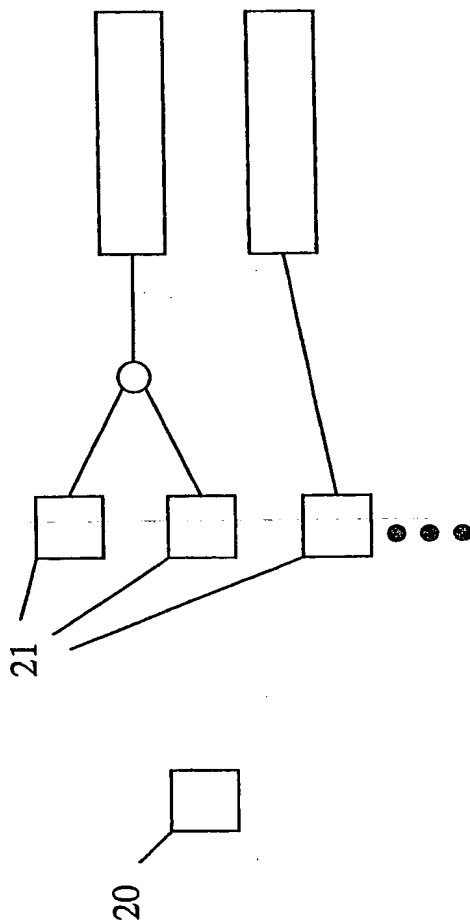
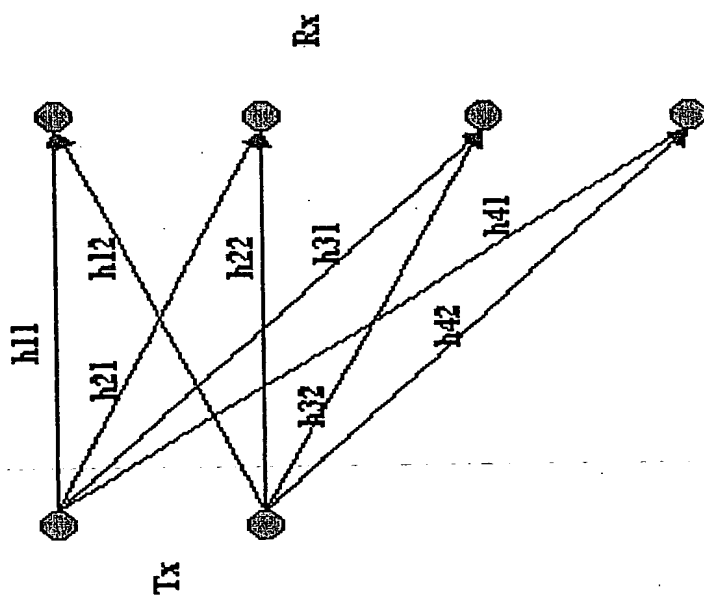


Figure 2b



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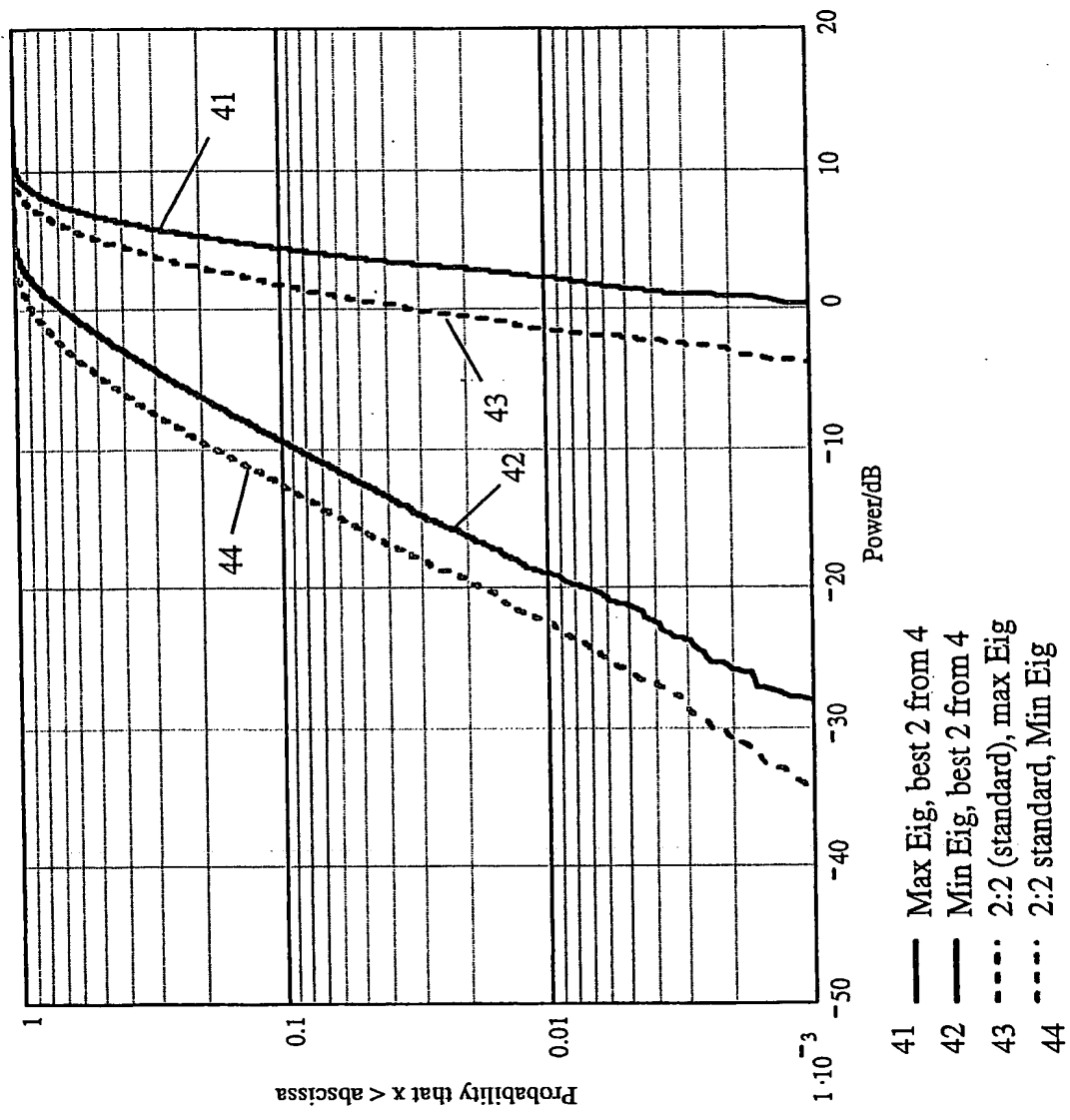


MIMO configuration with 2 Node B antennas and 4 UE antennas

Figure 3



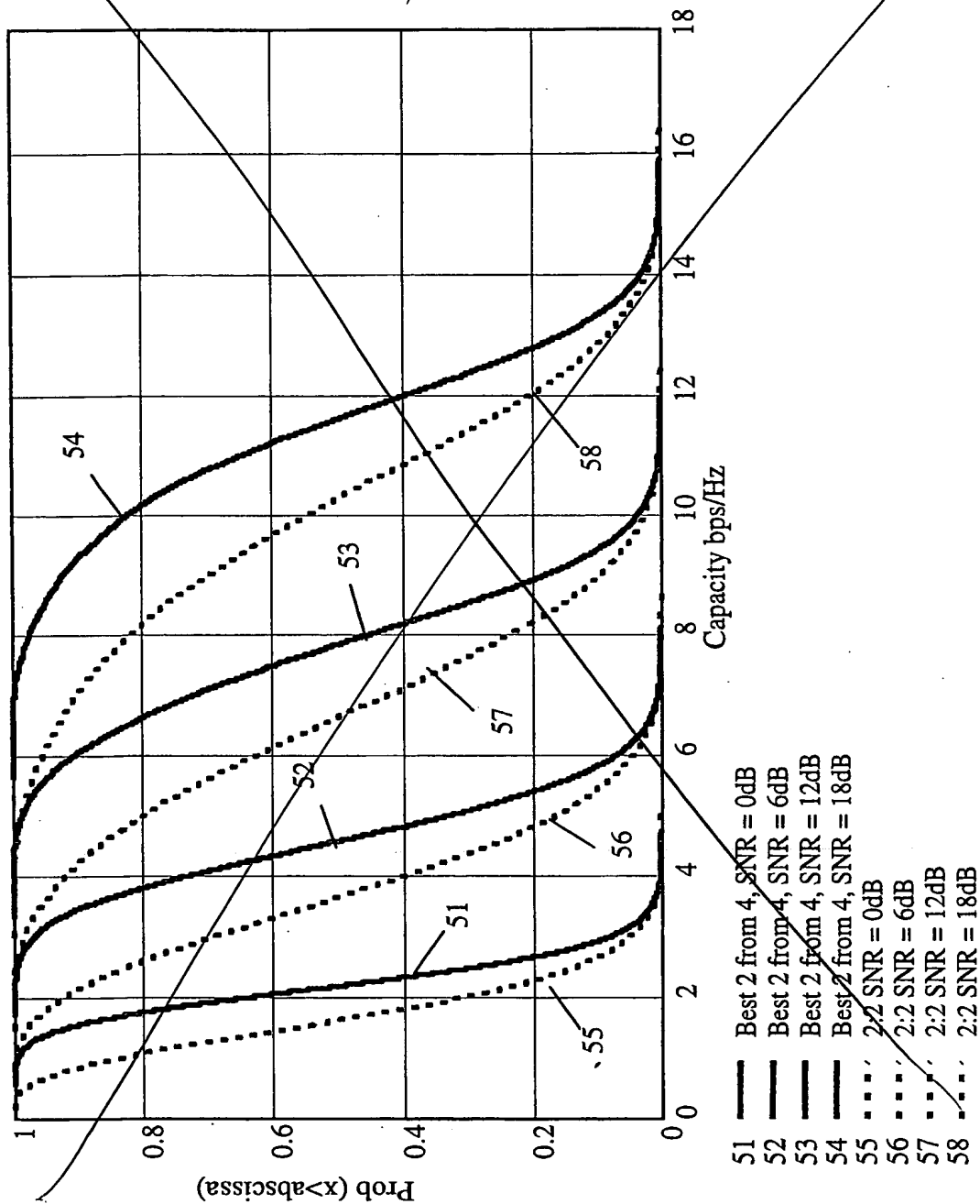
4/20 15



Comparison of eigenvalues for standard 2:2 MIMO and eigenvalue selection diversity (best 2 from 4) using the maximum sum of eigenvalues as the selection metric.

Figure 4

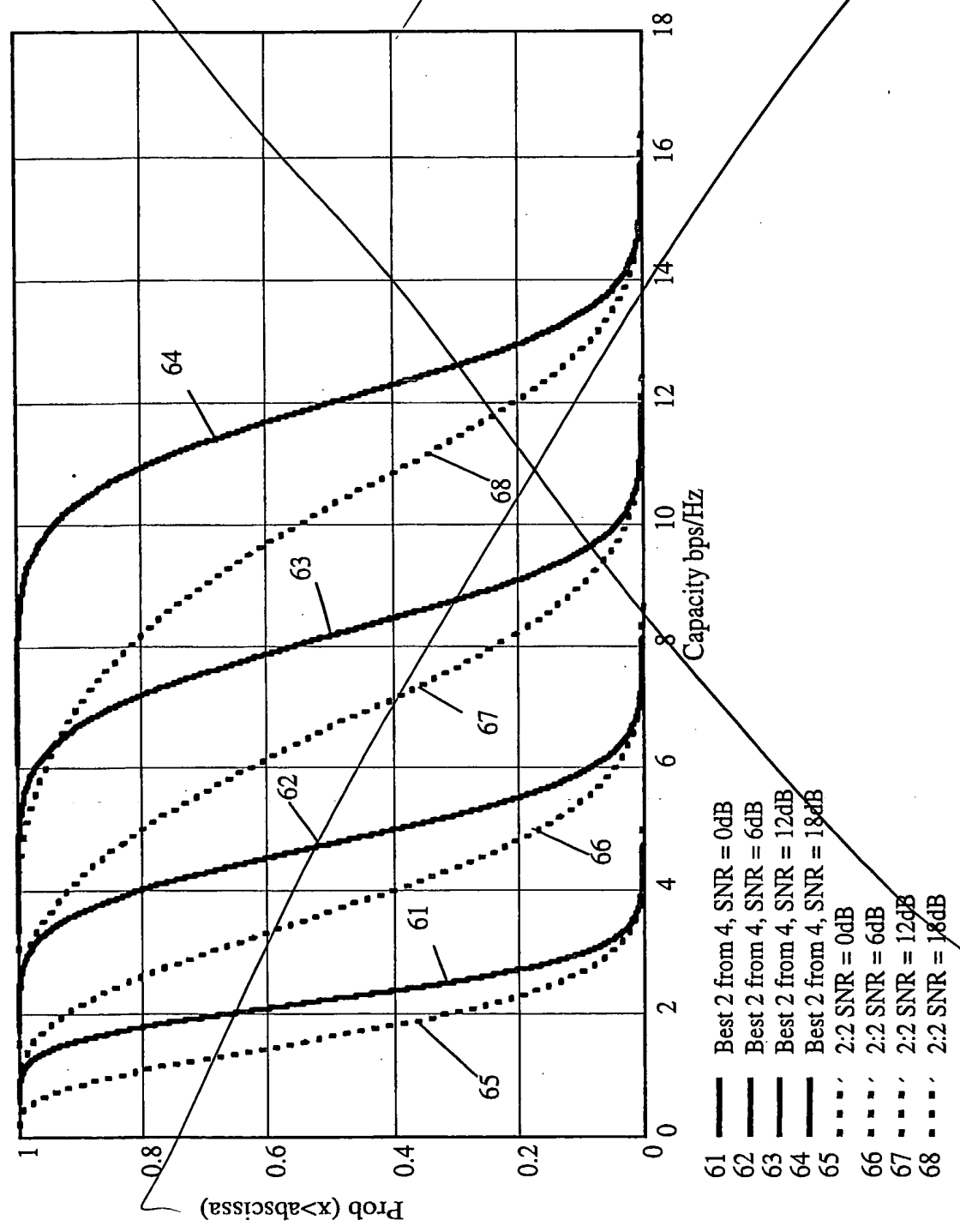
5/20



Comparison of capacity distributions for standard 2:2 MIMO and eigenvalue selection diversity (best 2 from 4) using the maximum sum of eigenvalues as the selection metric.

Figure 5

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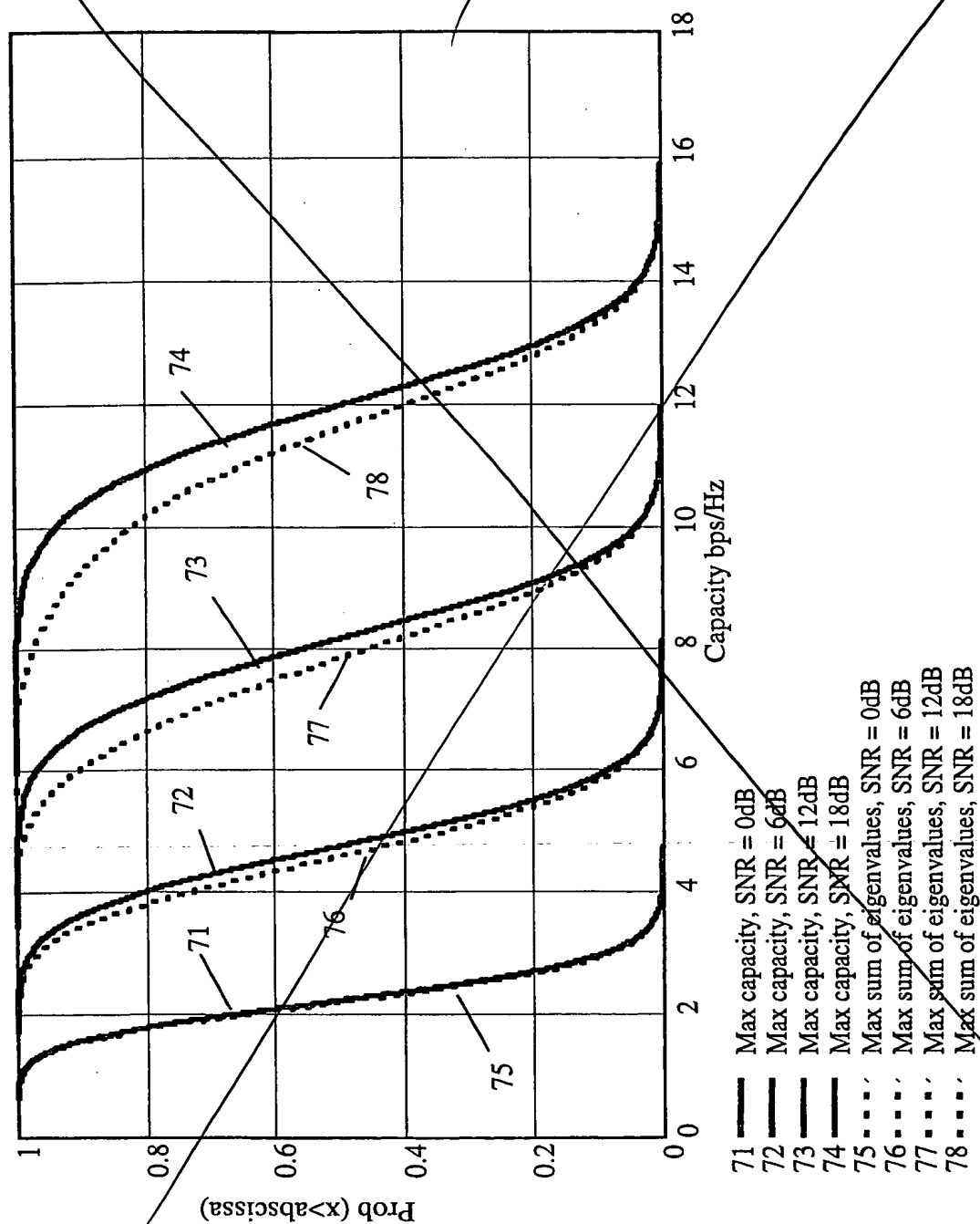


- 61 — Best 2 from 4, SNR = 0dB
- 62 — Best 2 from 4, SNR = 6dB
- 63 — Best 2 from 4, SNR = 12dB
- 64 — Best 2 from 4, SNR = 18dB
- 65 ··· 2:2 SNR = 0dB
- 66 ··· 2:2 SNR = 6dB
- 67 ··· 2:2 SNR = 12dB
- 68 ··· 2:2 SNR = 18dB

Comparison of capacity distributions for standard 2:2 MIMO and eigenvalue selection diversity (best 2 from 4) using the maximum instantaneous link capacity as the selection metric.

Figure 6

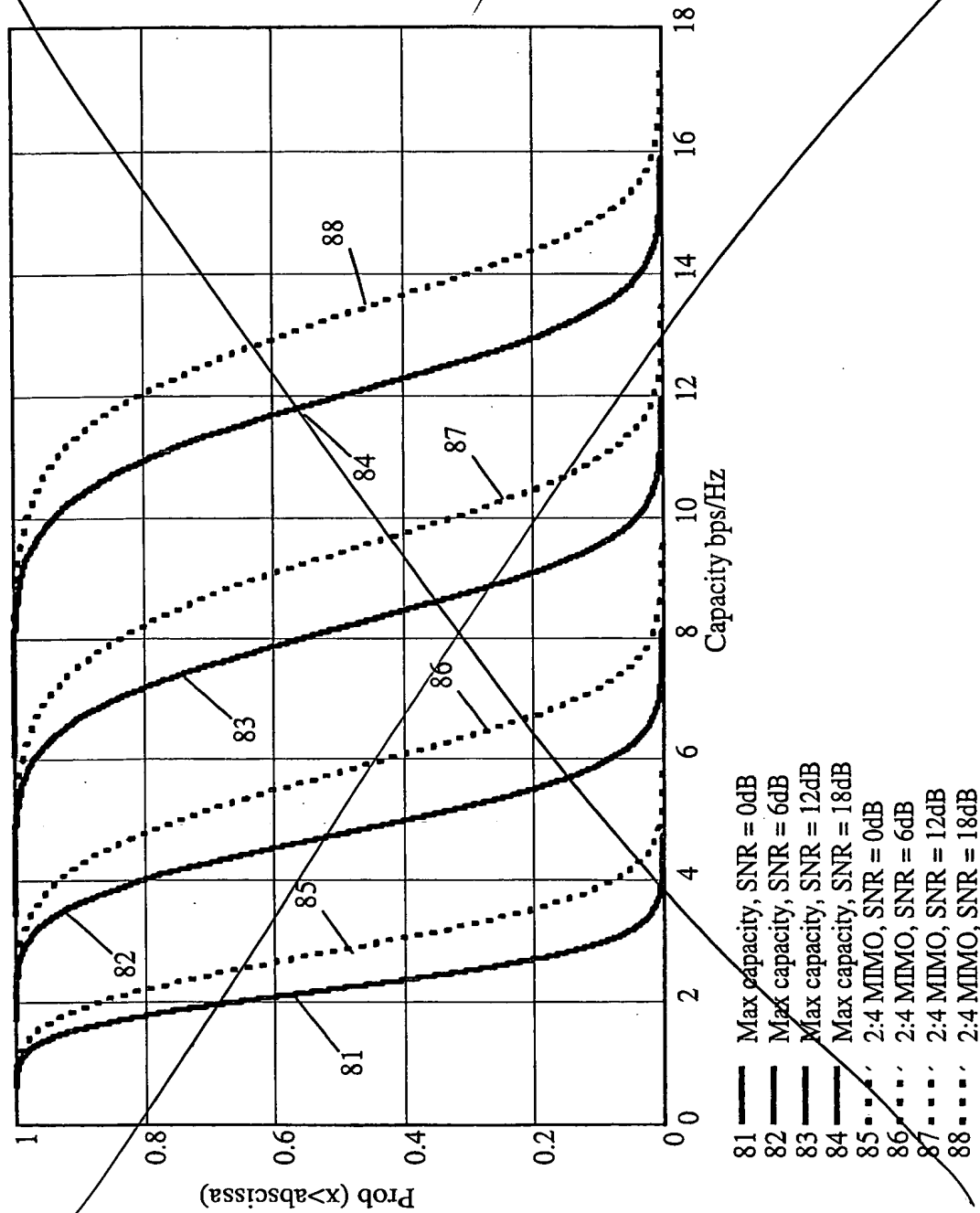
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Comparison of capacity distributions for the two eigenvalue selection diversity schemes

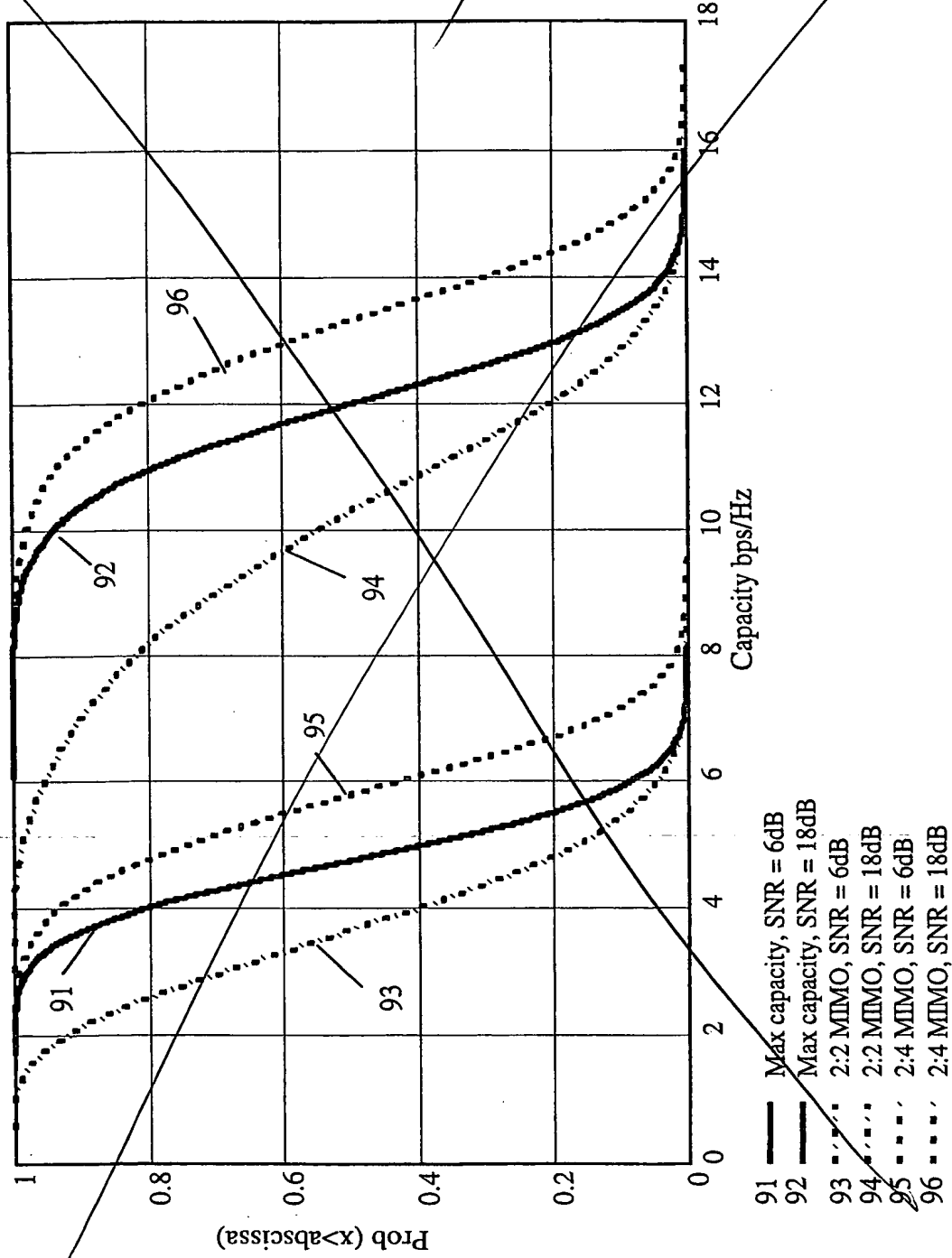
Figure 7

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Comparison of 'maximum capacity' eigenvalue selection diversity and standard 2:4 MIMO capacity distributions.

Figure 8



Comparison of maximum capacity eigenvalue selection diversity with 2:2 and 2:4 MIMO capacity curves

Figure 9

5 10/20 15

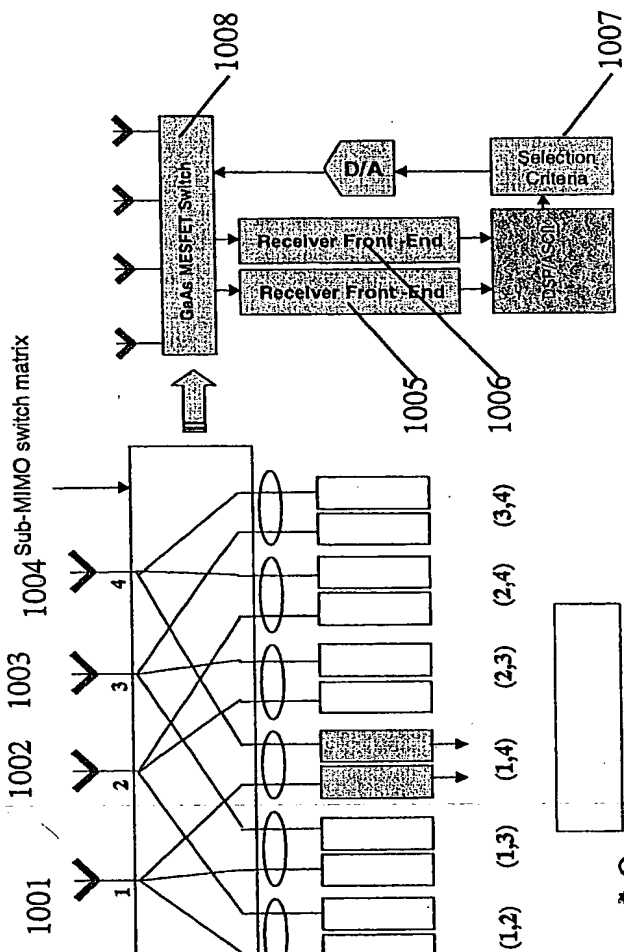


Figure 10a

5

6/14/2015

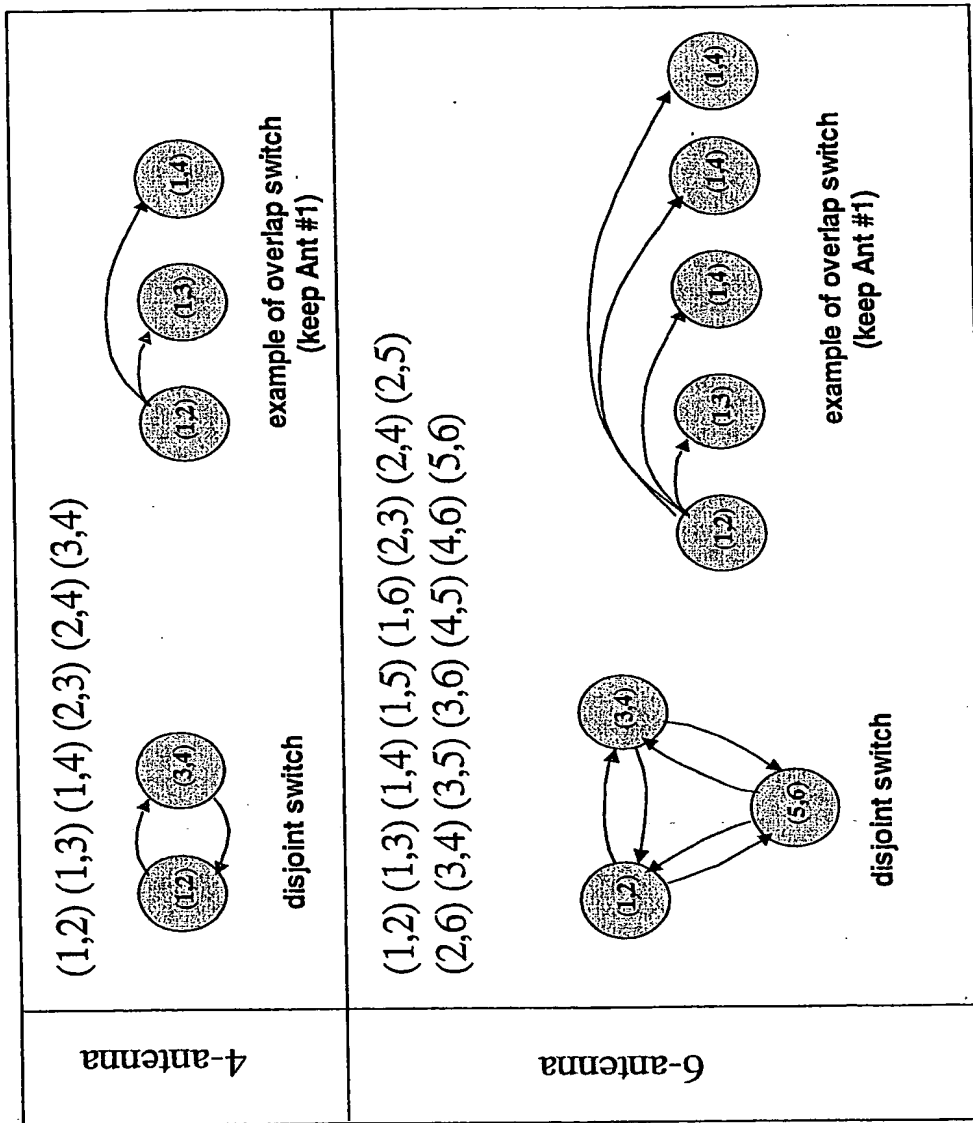


Figure 10b 6

7 12/20 15

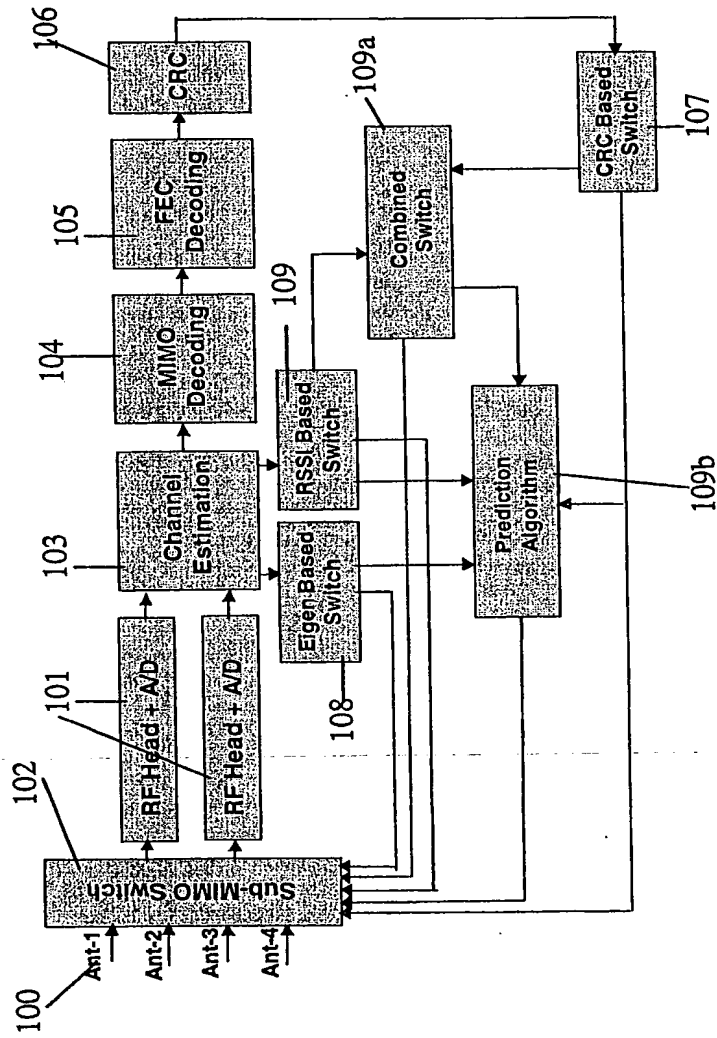


Figure 10c 7



8/13/2015

Sub-MIMO Switching Comparison

(STTD, ITU-VA, 100km/h, QPSK, R=1/3)

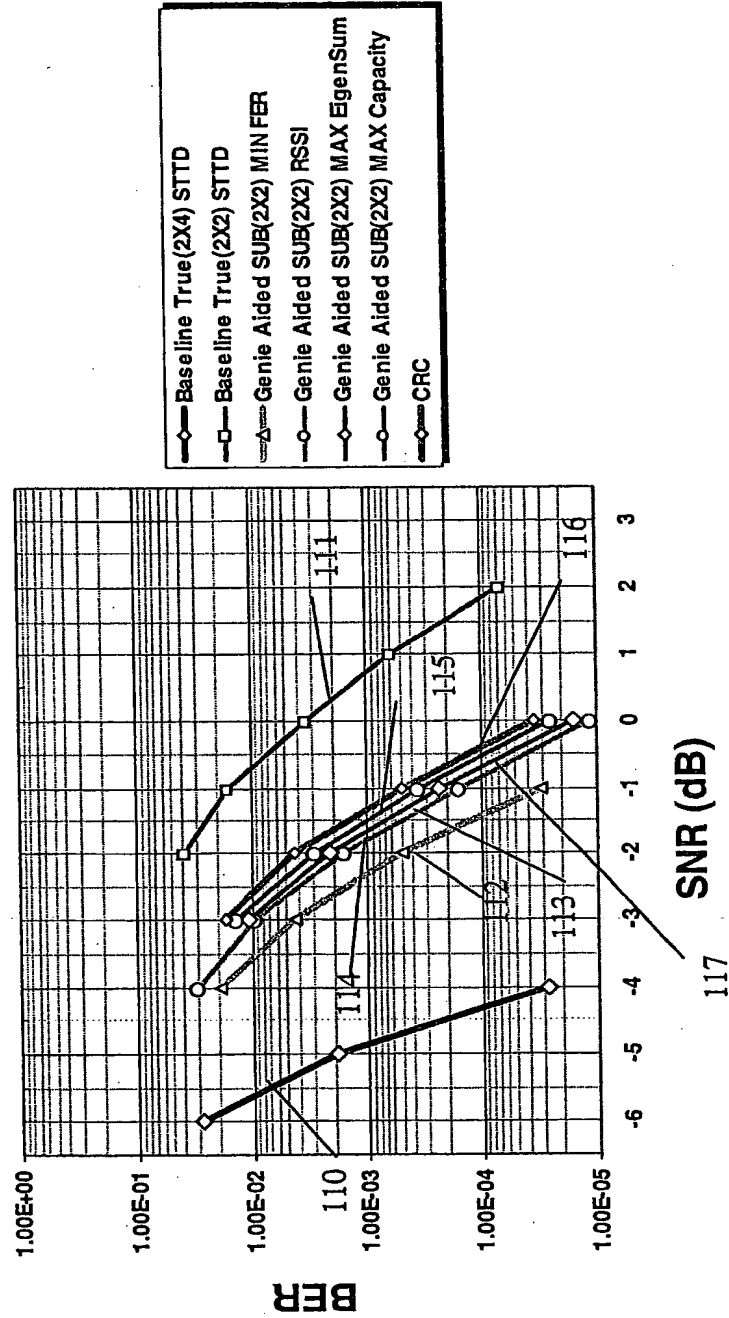


Figure 18



9 14/20 15

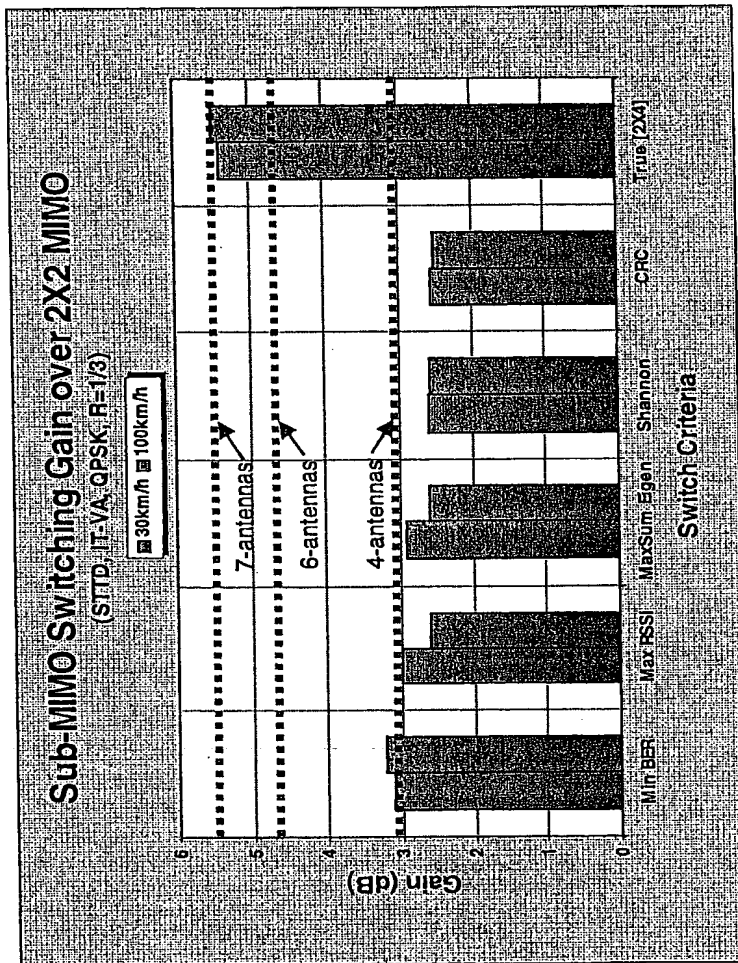


Figure 12.9



10 15/20 15

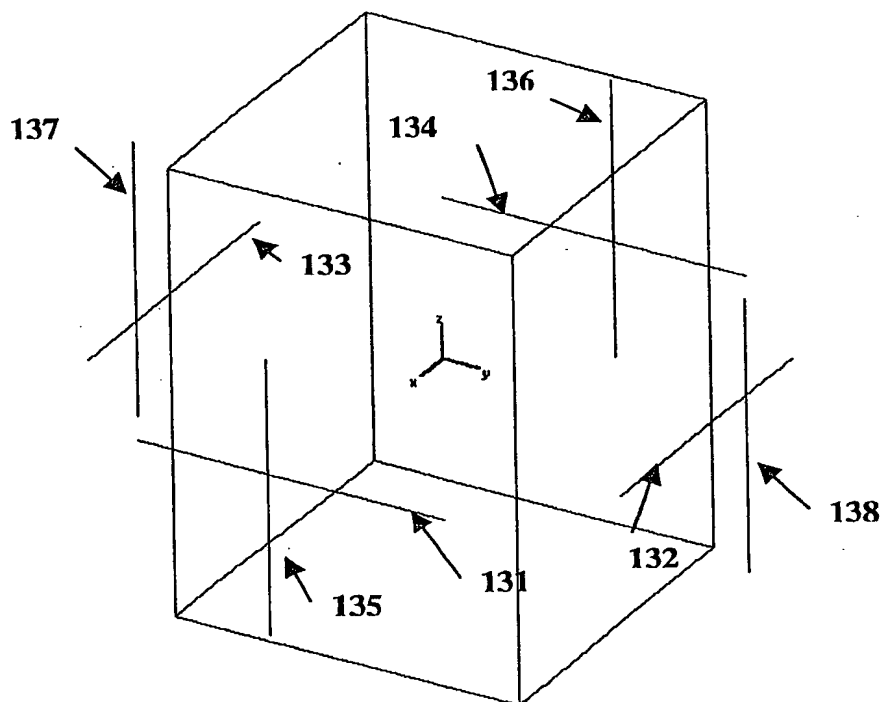


Figure ~~8~~ 10



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16/20

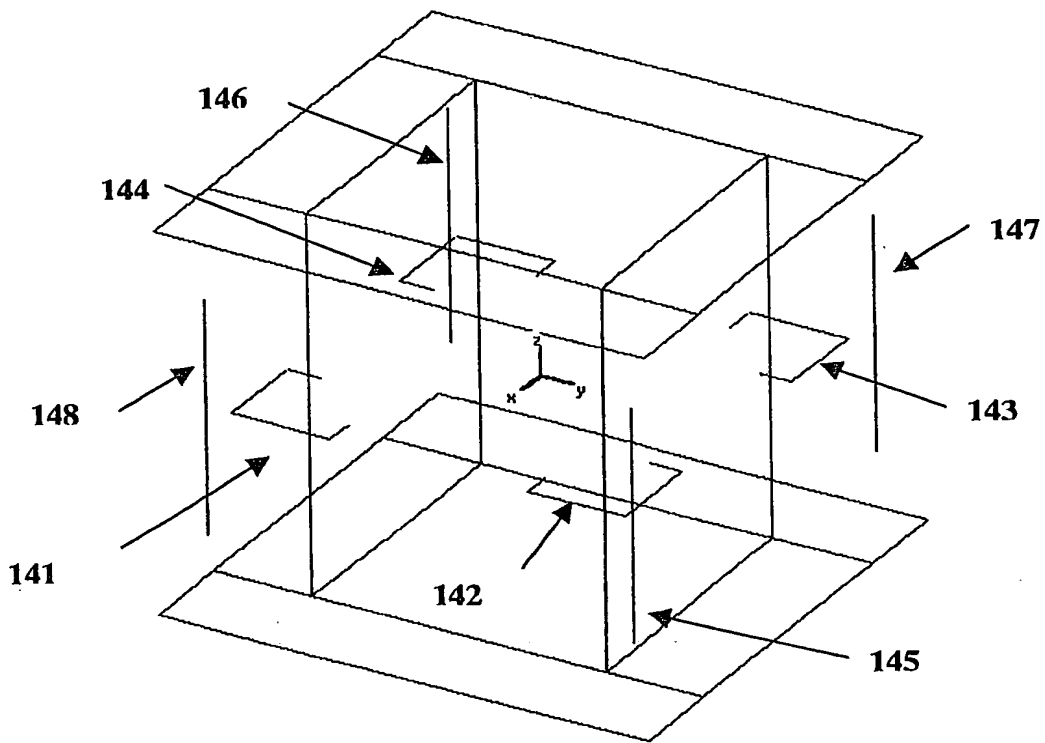


Figure 11



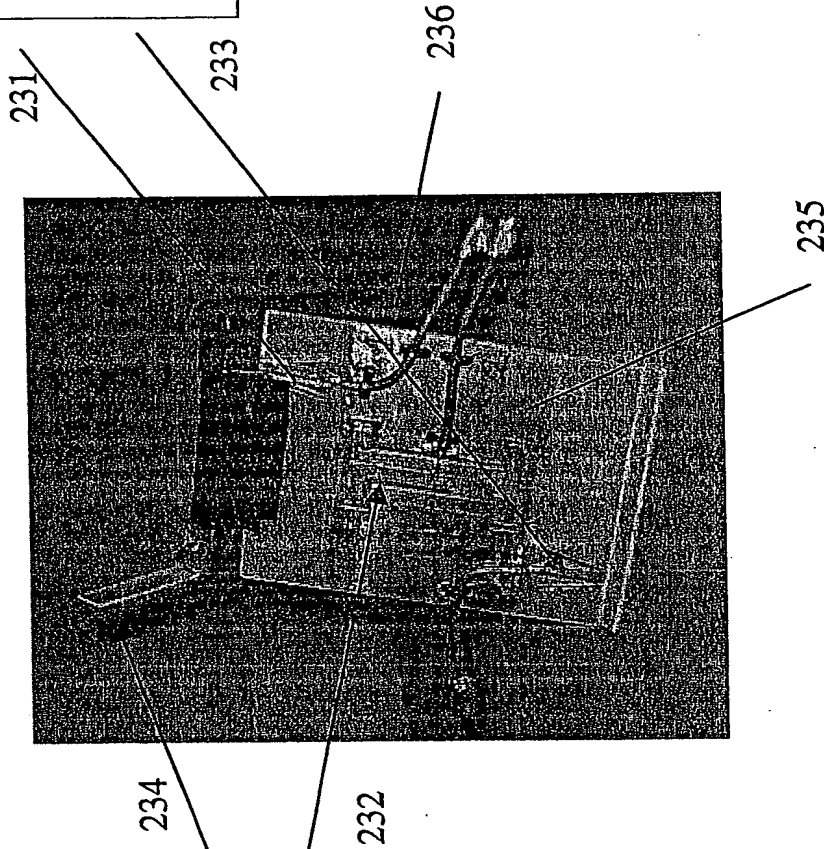
1217/2015

	Configuration 1		Configuration 2			
	180°	4.6	180°	3.9		
Average signal level (dB)	90°	6.7	90°	4.8		
Signal level spread (dB)	180°	1.4	180°	1.5		
	90°	0.5	90°	0.3		
Average standard deviation (dB)	180°	4.1	180°	1.7		
	90°	1.4	90°	0.4		
Lowest maximum achievable diversity gain (dB) (unit 0° orientation)	11.5		15			
Lowest maximum achievable diversity gain (dB) (unit 45° orientation)	14.5		14			

Figure 15 17

1318/2015

Elements 231 &
233 – umbrella
monopoles
polarised at
nominally +45°.



Element 232 –
folded slot & 234 –
monopole, which are
nominally polarised
to -45°.

FIGURE 16



14 ~~19/20~~ 15

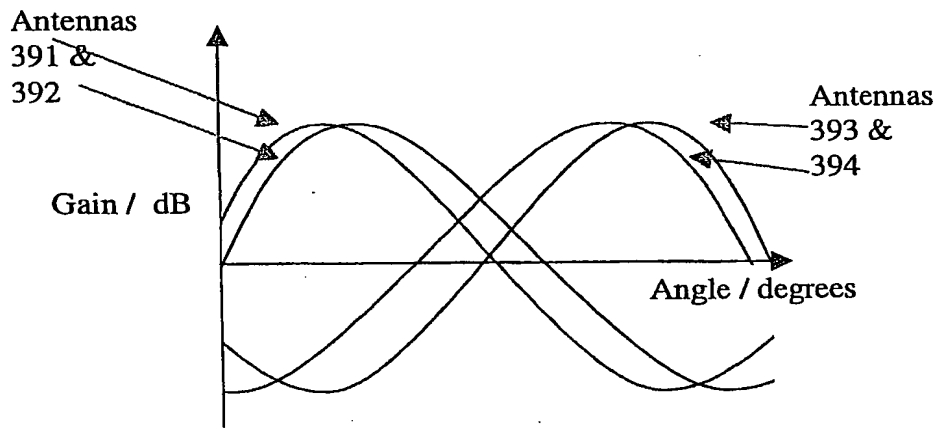
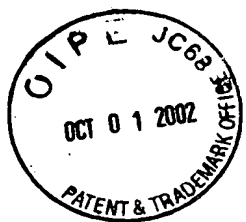


Figure ~~14~~ 14



15 20/20 15

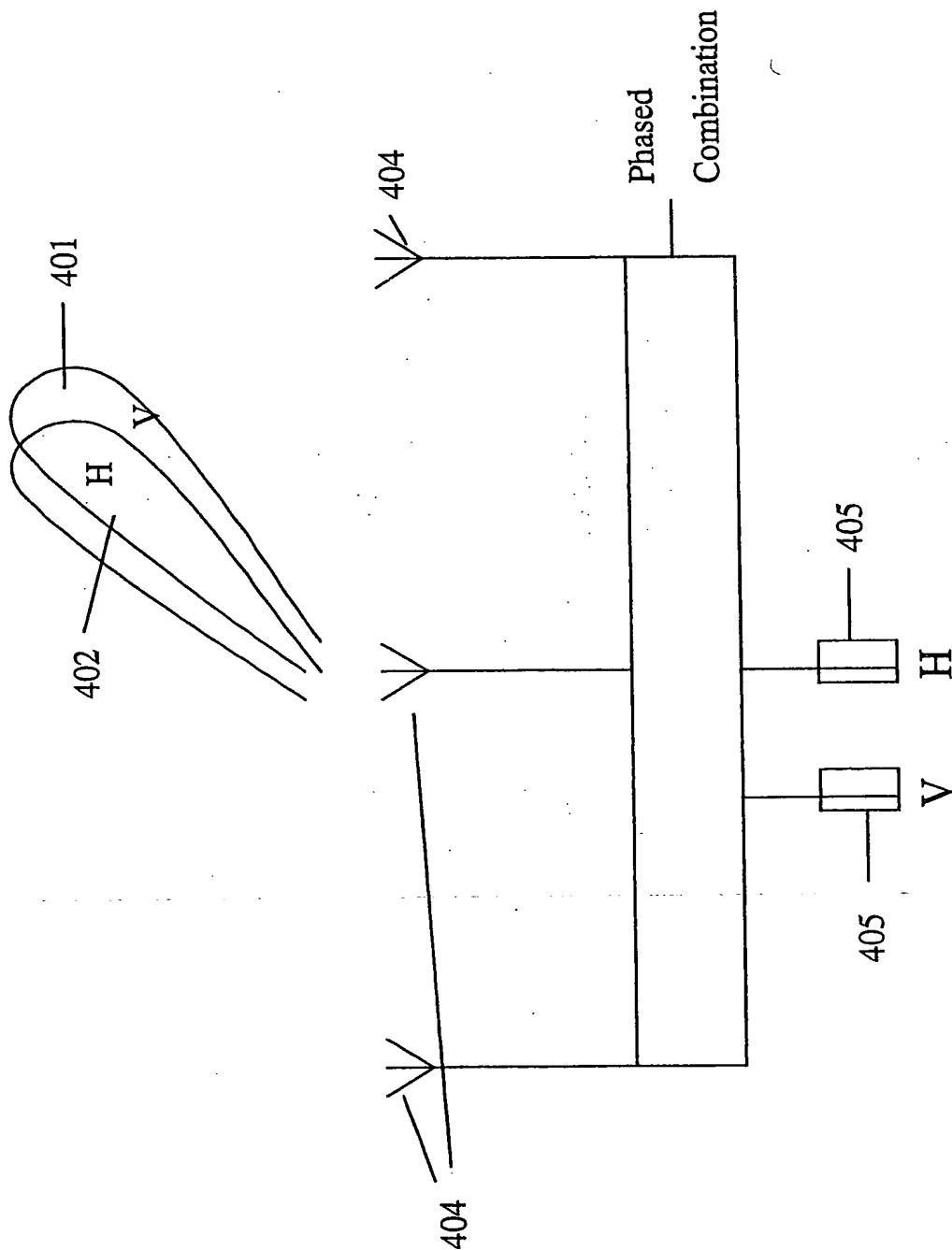
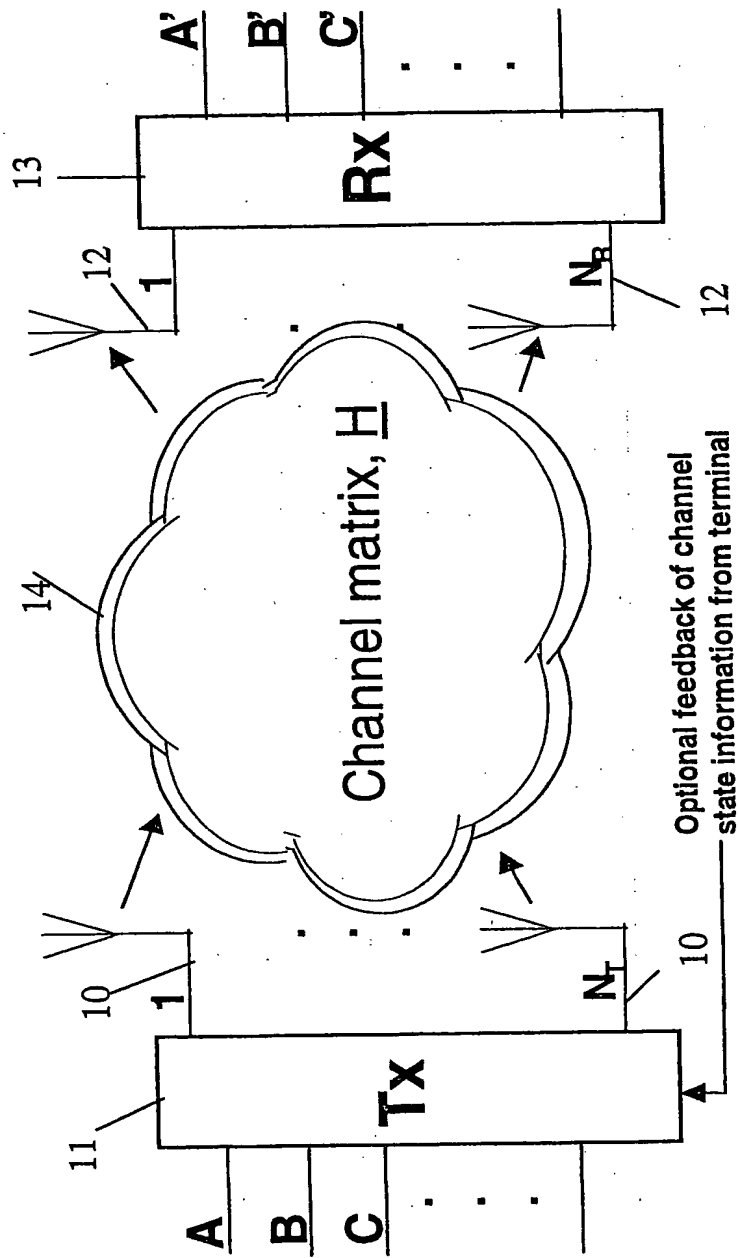


FIGURE 18 15

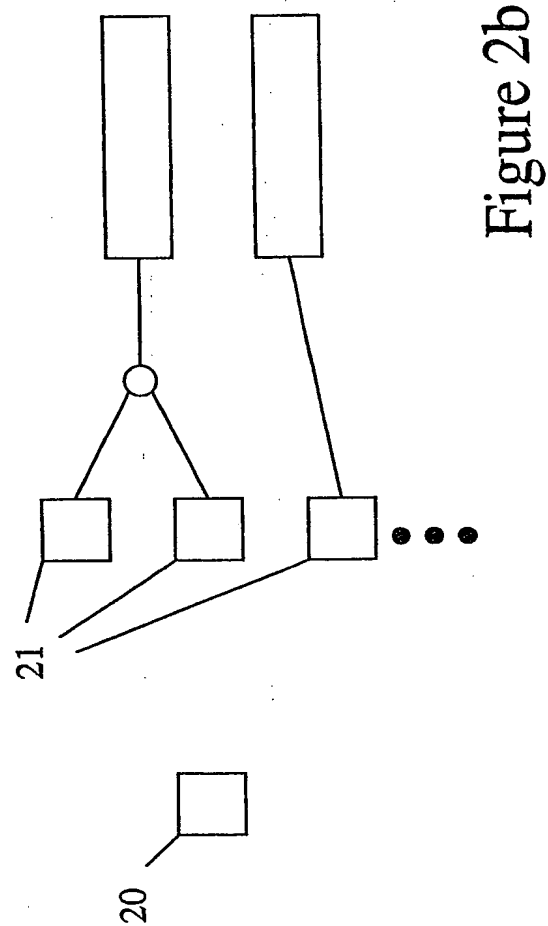
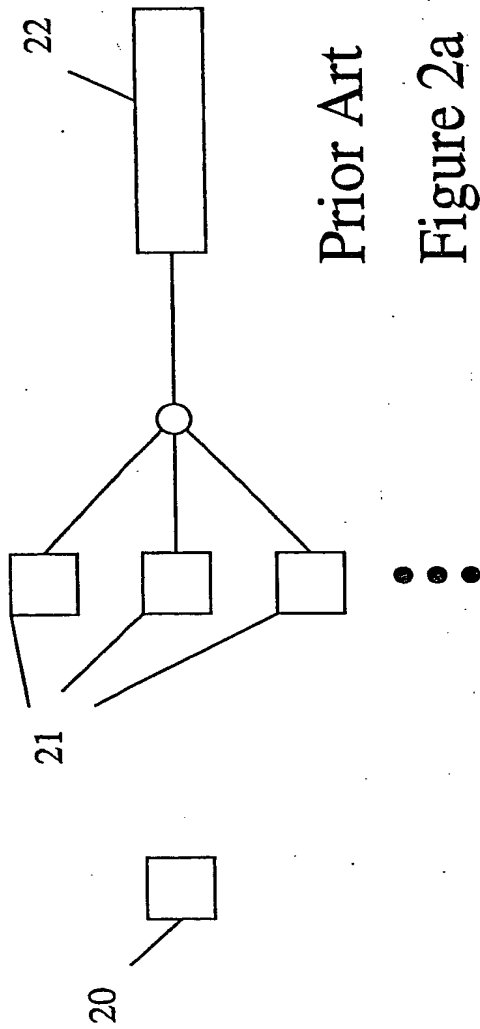
1/20 15



PRIOR ART

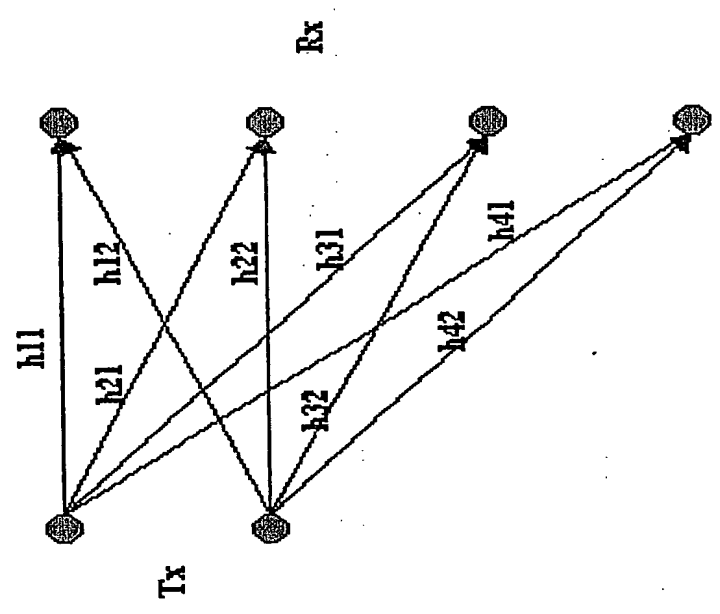
FIGURE 1

2/20 15



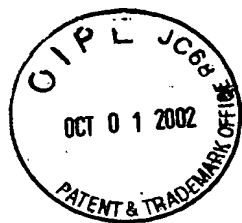


3/20 15

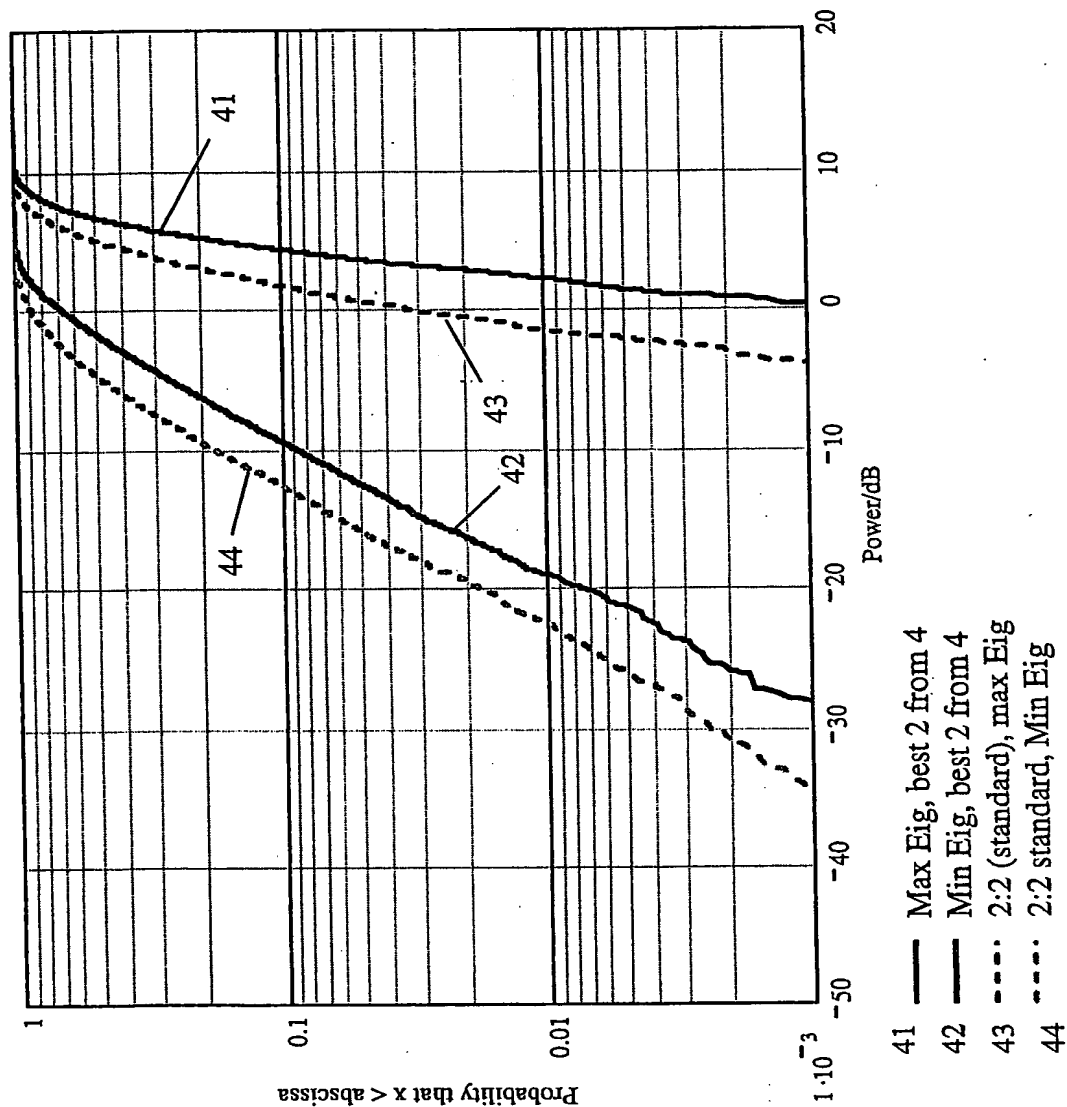


MIMO configuration with 2 Node B antennas and 4 UE antennas

Figure 3



4/20 15



Comparison of eigenvalues for standard 2:2 MIMO and eigenvalue selection diversity (best 2 from 4) using the maximum sum of eigenvalues as the selection metric.

Figure 4

5 10/20 15

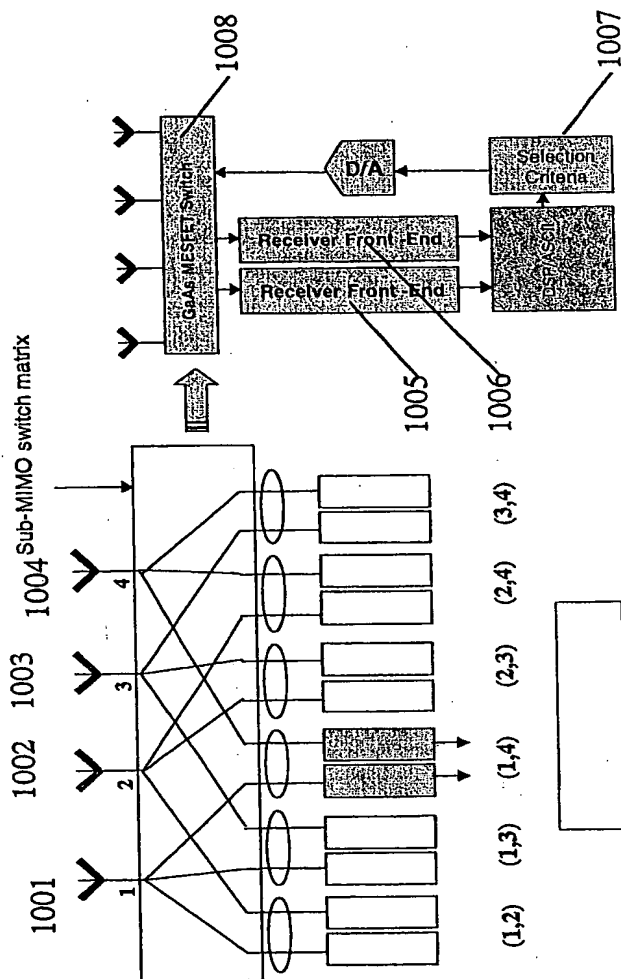


Figure 1004

6/11/2015

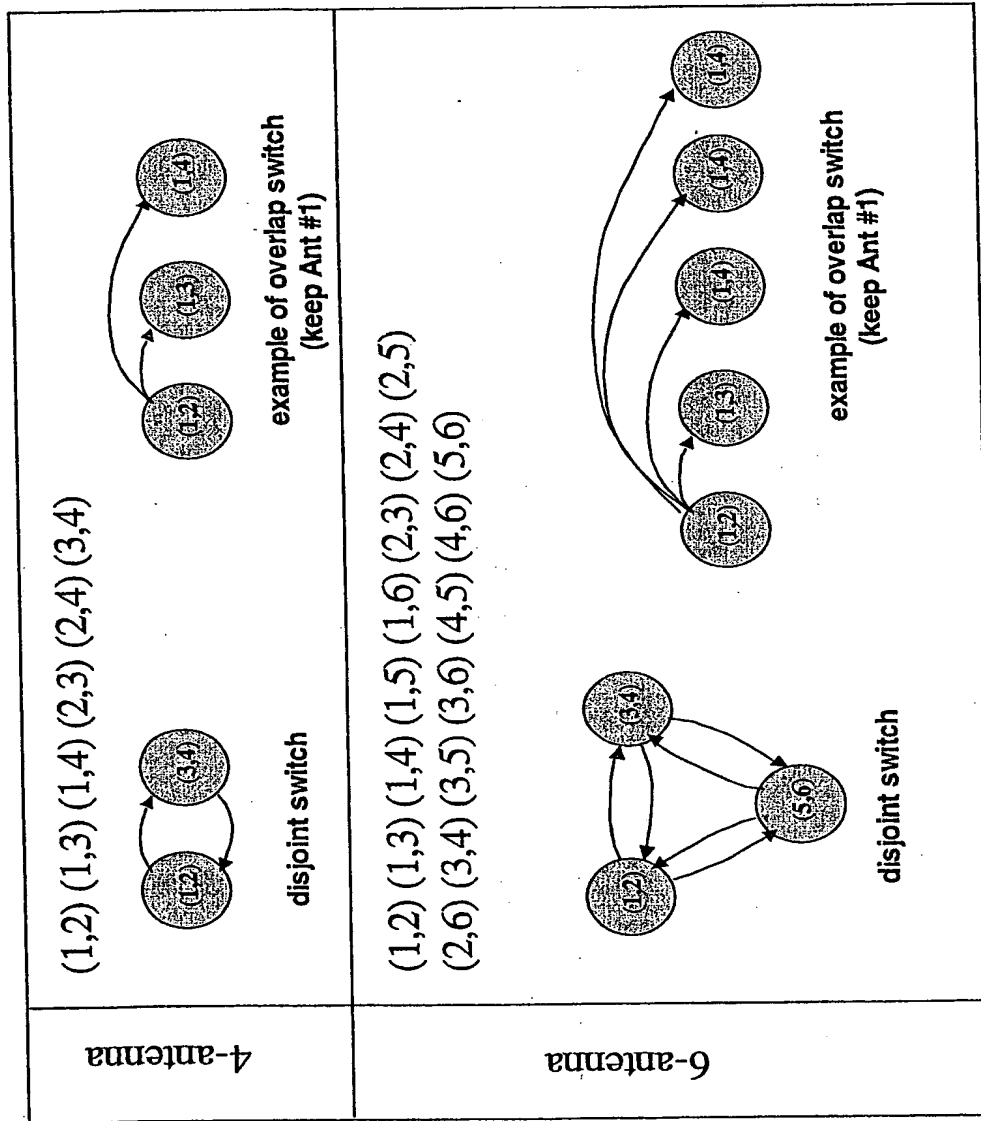


Figure 106 6

7 ~~12/20~~ 15

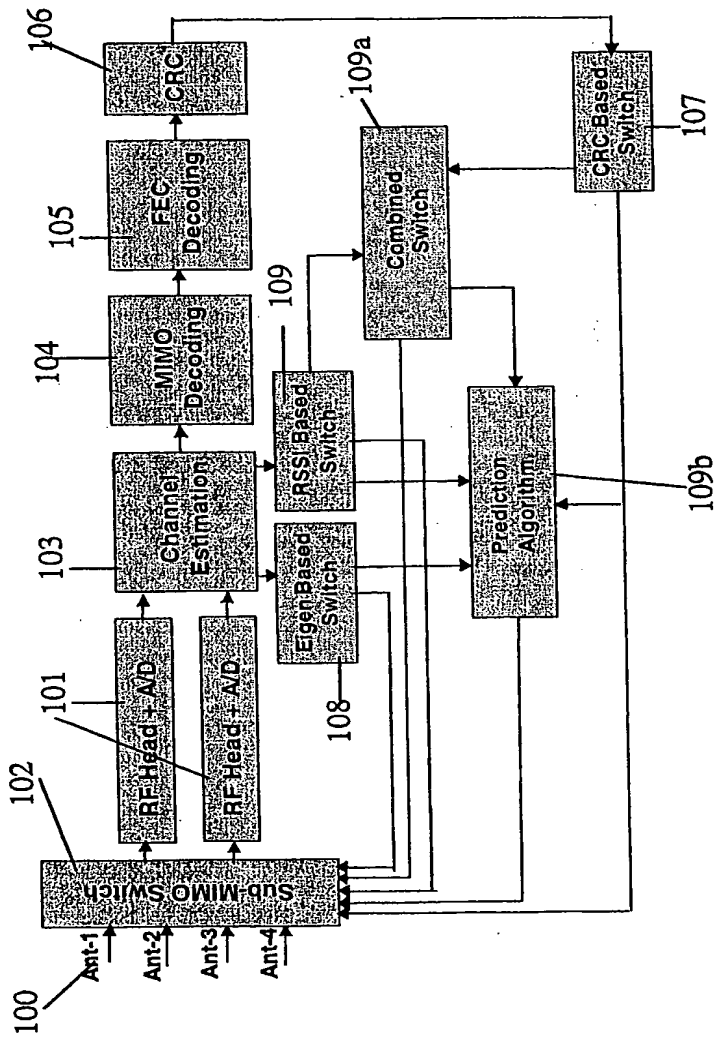


Figure 10c 7



8/13/20 15

Sub-MIMO Switching Comparison

(STTD, ITU-VA, 100km/h, QPSK, R=1/3)

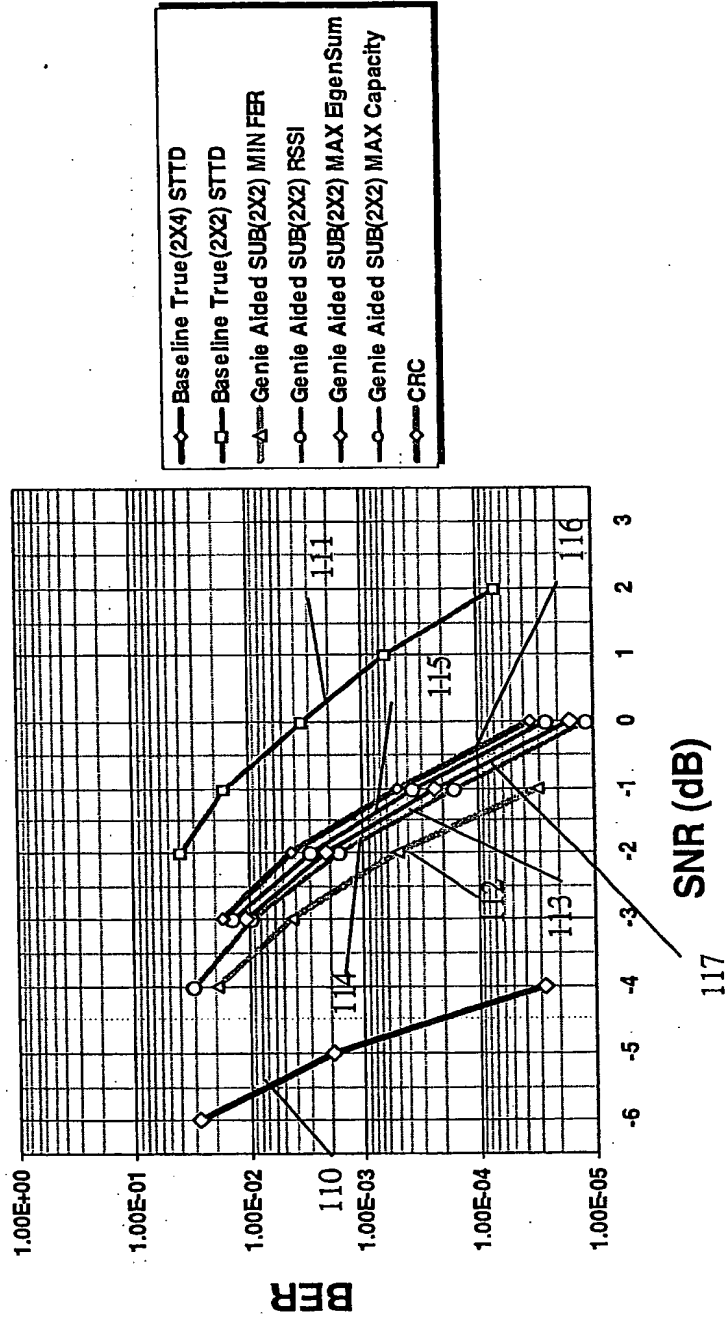


Figure X8



9 14/20 15

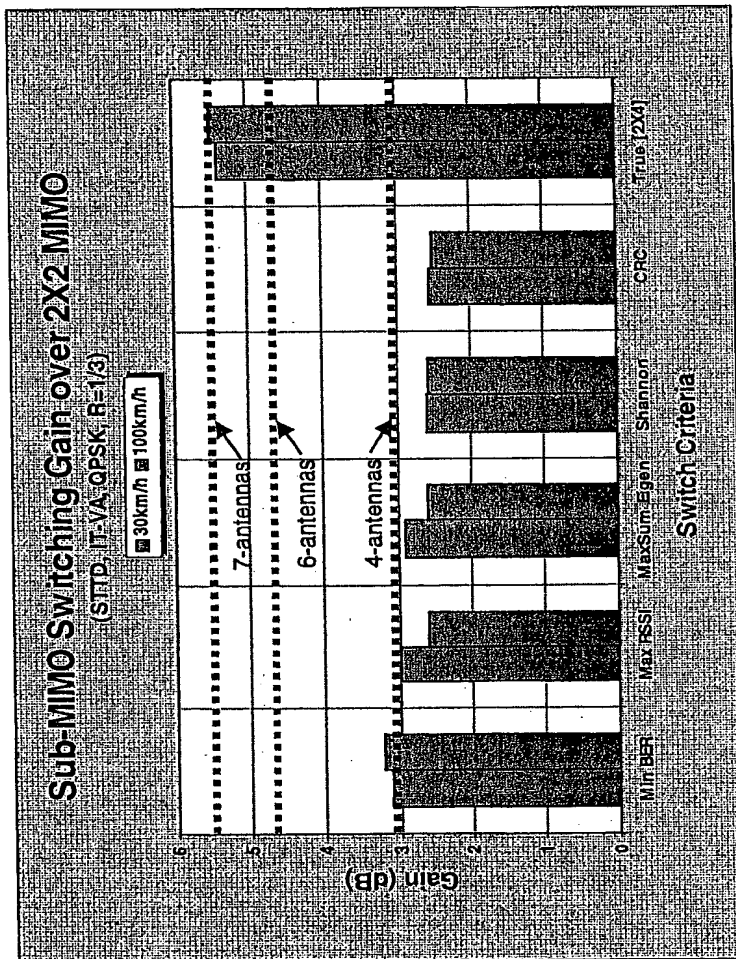


Figure 18.9



10 ~~15/20~~ 15

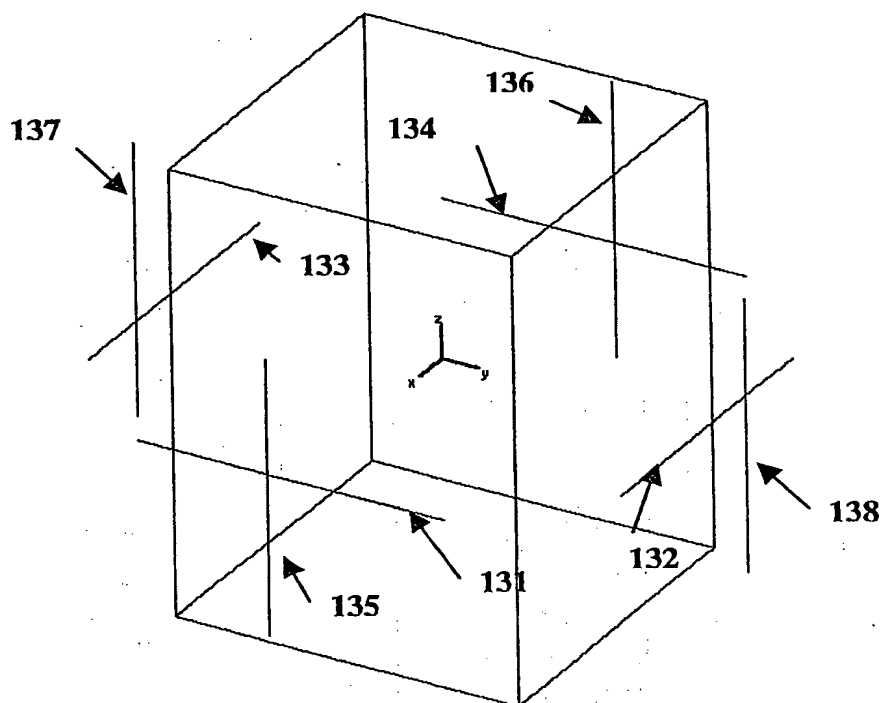
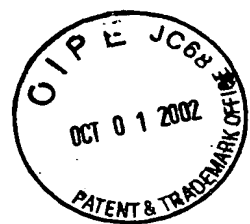


Figure ~~18~~ 10



11/15
~~16/20~~

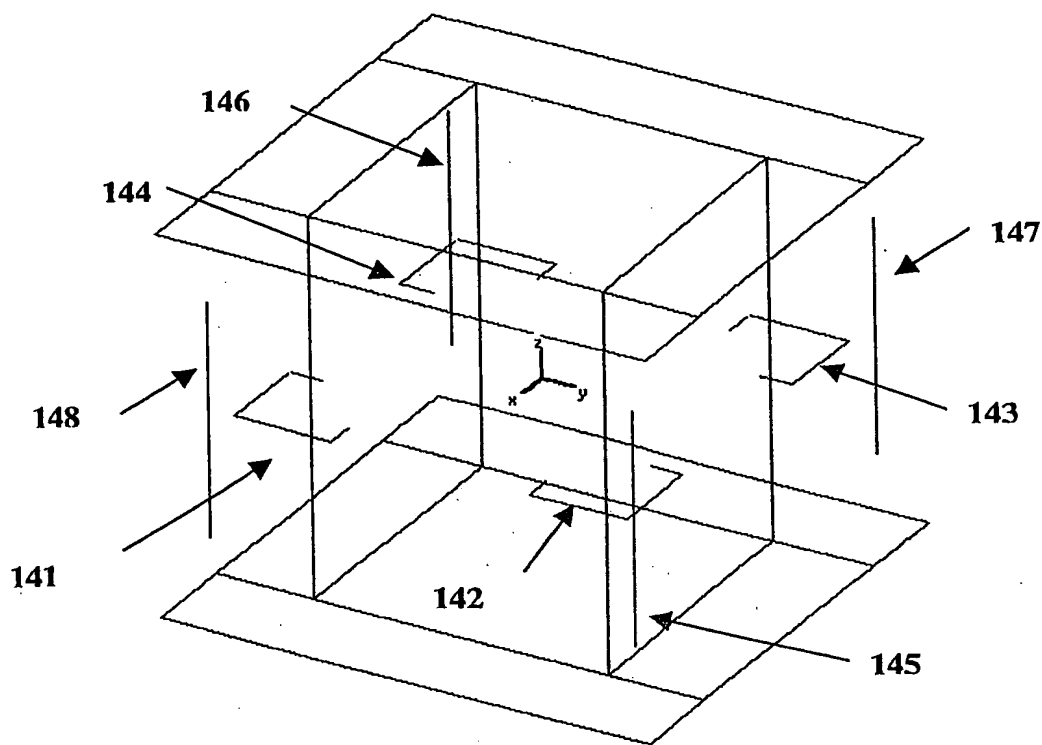


Figure ~~A~~ 11



12/17/2015

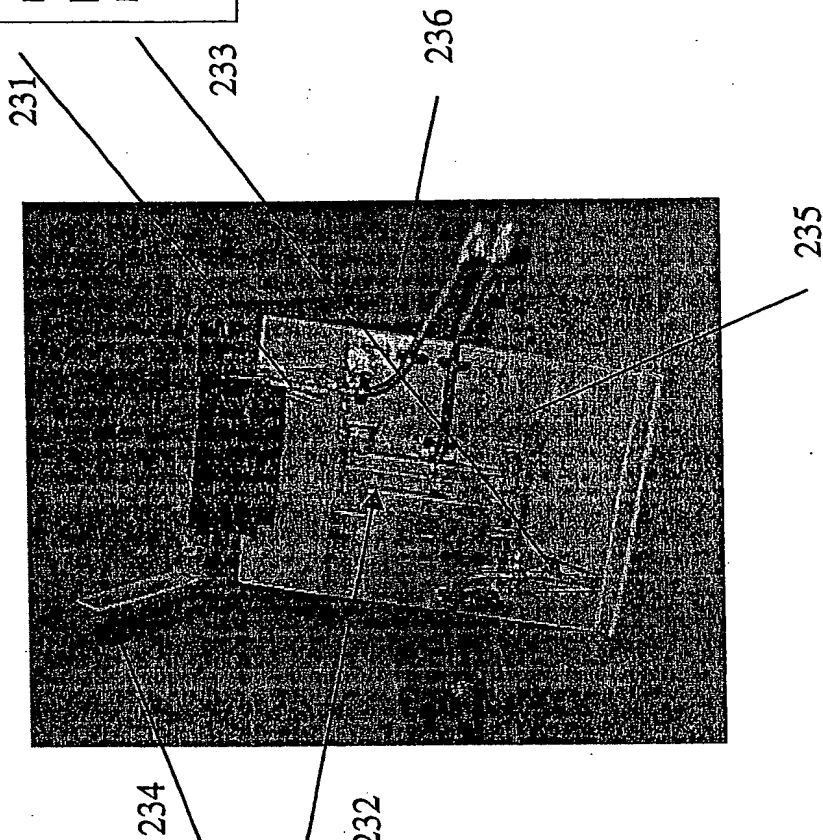
	Configuration 1		Configuration 2		
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Lowest maximum achievable diversity gain (dB) (unit 0° orientation)	11.5		15		
Lowest maximum achievable diversity gain (dB) (unit 45° orientation)	14.5		14		

Figure 15 17



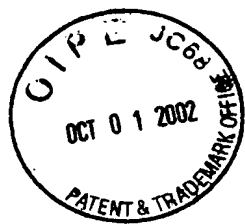
13/18/2015

Elements 231 &
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FIGURE 13



14 ~~19/20~~ 15

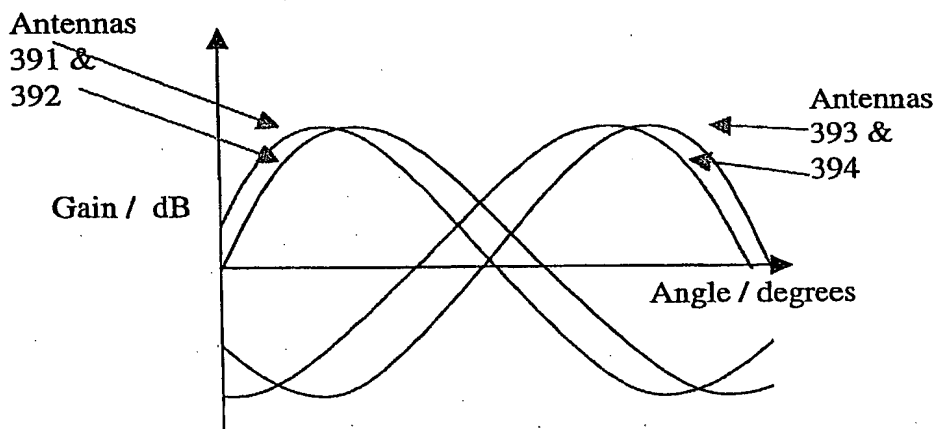


Figure ~~14~~ 14



15 20/20 15

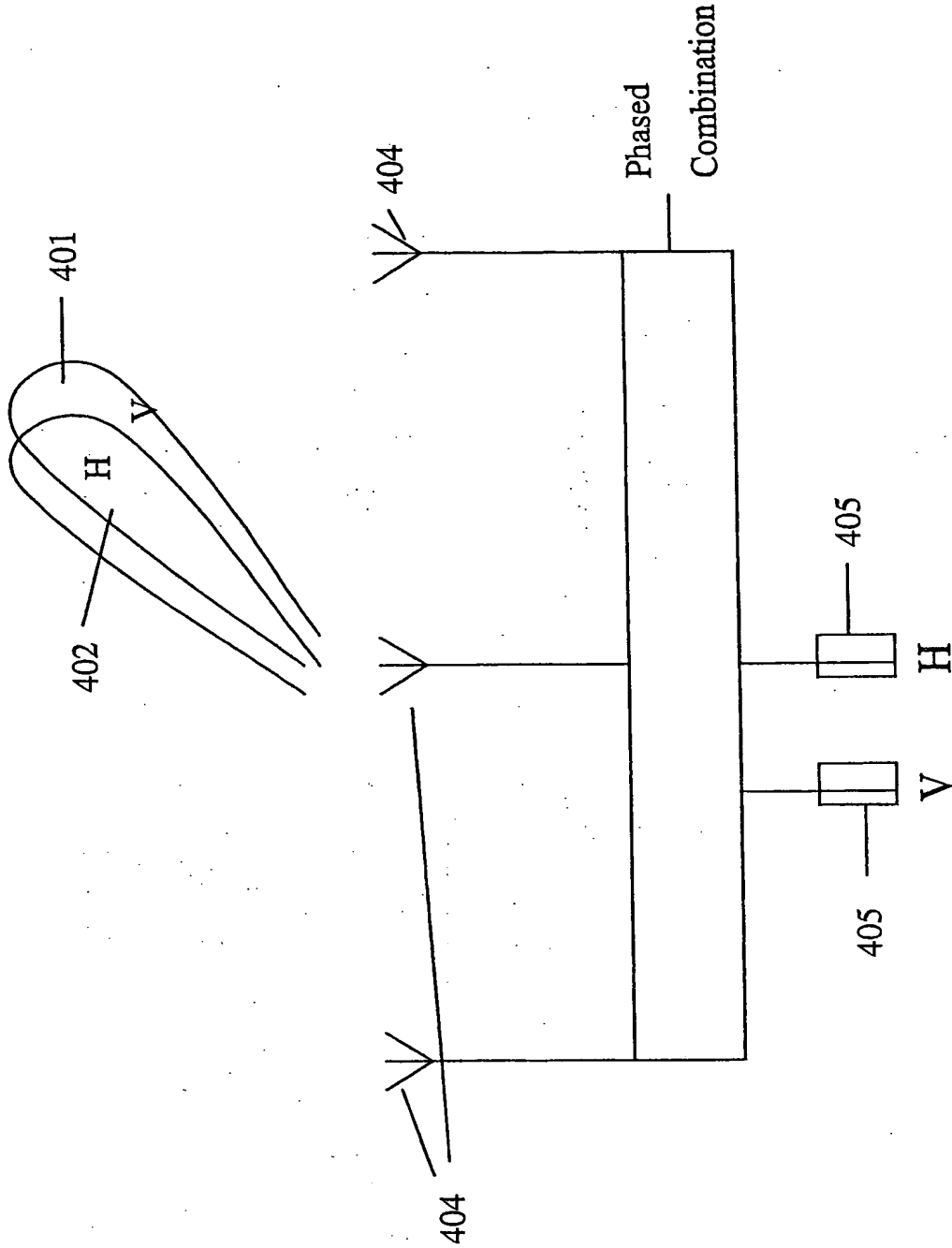


FIGURE 28 15